

European American equivalents. Slavery is no longer an issue, but the poverty, including the low salaries of the working class poor, malnutrition, and lack of immediate medical attention continue to contribute to this problem in the United States.

SEE ALSO: African American, Discrimination, Pregnancy

Suggested Reading

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Sleep Disorders Poor sleep is one of the most common presenting symptoms heard by modern doctors. Many sleep disturbances are caused by ineffective sleep hygiene, which refers to the sum total of the waking behaviors that affect the quality and quantity of our sleep.

The first step for the physician in the assessment and treatment of a complaint of impaired sleep is to review optimal sleep hygiene practices with a patient. A key component is establishing the bed as a sanctuary for sleep and sex only. Reliable daily sleep and wake times are important as well. The ideal amount of sleep likely varies from person to person, although a recent study revealed that women who reported typically sleeping less than 5 or more than 9 hr per night had a significantly higher risk of coronary heart disease than those who typically slept 6-7 hr nightly, at 10-year follow-up.

Abstaining from rigorous exercise or hot baths or showers too close to bedtime is a practical rule. If unable to fall asleep after 30-45 min in bed, individuals are advised to spend 20-30 min occupied in some activity outside the bedroom and then try to retire again. Caffeine and tobacco should be avoided within 3 hr of bedtime, as should meals and significant fluid intake. Alcohol may promote the initiation of sleep but will reliably decrease the quality and continuity of ensuing sleep.

The comprehensive assessment of a potential sleep disorder includes a thorough history of sleep dysfunction and sleep hygiene, a complete medical and mental health history, a review of current medications, an assessment of drug and alcohol use, a physical examination with guided use of laboratory testing, and an overnight "sleep study," or polysomnogram. Polysomnography is the systematic evaluation of brainwave, ocular, muscular, and respiratory function during sleep. Recorded over the course of a typical night's sleep, this exam may reveal apneas or hypopneas (the absence or slowing of spontaneous respiration, respectively) or abnormal body movements. The latency (duration from bedtime to sleep onset), continuity, efficiency, and architecture of sleep are each assessed. Sleep architecture refers to the duration of and transitions between the unique physiologic phases of sleep.

Five specific stages of sleep are identified: one stage of rapid eye movement (REM) sleep and four stages of non-rapid eye movement (NREM) sleep, identified as stages 1 through 4. Stage 1 NREM is relatively brief and signifies the transition from a waking state to sleep. Stage 2 NREM, significant for "sleep spindles" and "K complexes" on the EEG portion of the polysomnogram, comprises up to 50% of total sleep time. Progressively deeper stages of sleep, stages 3 and 4 ("slow-wave" sleep) occupy up to 20% of sleep time, while REM sleep, in which dream activity and loss of muscle tone occur, occupies up to 25% of sleep time. REM sleep occurs typically every 80-90 min, and periods of REM become longer in duration across the night. NREM stages 3 and 4 are more prominent during the first half of the night, and tend to deteriorate in duration and frequency as we age. Perhaps as a result, up to 50% of American seniors may have a sleep disorder.

There are multiple specific sleep disorders. These can be divided into four main groups: sleep disorders caused by: (a) an independent mental disorder, (b) the use or discontinuation of a substance, or (c) a general medical condition (all are "secondary" sleep disorders), and the "primary" sleep disorders, which include the *dyssomnias*, or disorders of the onset or maintenance of sleep; and the *parasomnias*, or disorders of abnormal behaviors associated with sleep. Parasomnias include conditions such as sleepwalking (somnambulism), sleepwalking (somniloquy), sleep terrors, nightmares, REM sleep behavior disorder, bruxism, and enuresis ("bedwetting").

Mood and anxiety disorders commonly perturb sleep. Sleep disorders secondary to other mental disorders are more common in women than in men.

Sleep Disorders

Up to 50% of individuals with chronic insomnia may have a separate mental disorder responsible for the sleep disturbance. Major depression, bipolar disorder, schizophrenia, adjustment disorders, and anxiety disorders such as panic disorder, generalized anxiety disorder, and posttraumatic stress disorder typically involve an alteration in the amount and timing of sleep. In major depression, for example, sleep latency is prolonged, REM latency decreased, and REM sleep becomes denser. Slow-wave sleep is reduced. The medications used to treat these disorders may also cause disturbances in sleep, such as insomnia, hypersomnia, vivid dreams or nightmares, or bruxism.

Intoxication or withdrawal from drugs and alcohol may cause significant sleep disruption. Alcohol intoxication increases slow-wave sleep and suppresses REM sleep, and causes restless, fitful sleep with increased dreaming. Its use may also worsen sleep apneas. Withdrawal from chronic alcohol use tends to reveal a drop in slow-wave sleep and increase in REM. Caffeine use increases wakefulness and contributes to insomnia, but hypersomnia or fatigue may ensue after an individual dose has worn off. Amphetamines and cocaine tend to cause insomnia with intoxication and hypersomnia with withdrawal. Opioids, sedatives, and many anti-anxiety medications are acutely sedating, but provoke insomnia when used chronically, as tolerance develops. As with alcohol, a rebound in REM sleep amount may be seen after discontinuation of these agents.

Scores of medical conditions carry with them the risk of sleep impairment. Common culprits include acute infection, dementia, rheumatologic disorders characterized by acute or chronic pain, neurodegenerative disorders, endocrine disorders, cardiopulmonary disease, epilepsy, headaches, and other neurologic disorders. Women are at greater risk for disrupted sleep in pregnancy, postmenopause, and with polycystic ovary syndrome (secondary to a higher risk of sleep-disordered breathing). In hospitals and nursing homes, delirium is a very common cause of sleep disruption. A delirium is an acute confusional state secondary to an acute medical condition or substance that is characterized by impairments in attention, concentration, cognition, and perception. Sleep is often fitful, nonrestorative, and exhibits a day–night reversal pattern.

More common dyssomnias include primary insomnia or hypersomnia, narcolepsy, sleep apnea, restless legs syndrome, and circadian rhythm sleep disorders. Narcolepsy involves daytime sleep attacks, cataplexy (brief episodes of loss of muscle tone, often associated

with intense emotion), sleep–wake hallucinations, and sleep paralysis. Onset is typically during adolescence and genetics is believed to have a strong role. The disorder is rare, perhaps affecting 1 in 1,000 persons, and the male:female ratio is roughly 1:1. Treatment goals include ensuring wakefulness by day and the consolidation of sleep at night. Amphetamine stimulants and a newer nonamphetamine medication, modafinil, may promote daytime wakefulness, and sedative-hypnotics may help nighttime sleep.

Sleep apnea may be either central or obstructive in type. Central sleep apnea is rare and involves diminished respiratory drive at the level of the brainstem. Obstructive sleep apnea (OSA) is much more common, affecting from 1% to 10% of the population. The male-to-female ratio is around 3 to 1. OSA is caused by the mechanical obstruction of ventilation by increased palatal and pharyngeal tissues. Obese persons are at greater risk. Excessive daytime sleepiness, morning headaches, loud snoring, and apneas observed by sleeping partners can aid in diagnosis, which is confirmed by polysomnography. Many are first diagnosed between 40 and 60 years of age. Treatment involves weight loss, smoking cessation, reduction of cardiac risk factors (as OSA carries with it an increased risk of high blood pressure), and ventilation through the night with continuous positive airway pressure (CPAP) machines. Surgeries to reduce posterior palatopharyngeal tissues have not been routinely helpful.

Restless leg syndrome involves random, repetitive irregular movements of the feet and legs, and unpleasant aches and pains sensed deeply in the lower extremities. The discomfort often mandates walking or rubbing of the legs by the sufferer for temporary relief. The symptoms occur in the evening and earlier phases of sleep, and respond on a limited basis to dopamine agonists, tricyclic antidepressants, or opiate analgesics. Common causes include peripheral nerve disorders related to diabetes or kidney dysfunction, pregnancy, iron deficiency, and medication side effects. Periodic limb movement disorder is a similar disorder that involves repetitive involuntary movements, which intrude upon normal sleep maintenance and cause nonrestorative sleep and excessive daytime sleepiness. Restless leg syndrome and OSA are the two most common primary sleep disorders in the elderly.

Circadian rhythm sleep disorders include jet lag, shift work, and delayed sleep phase disorders. Jet lag syndrome is seen when people travel two or more time zones, typically west to east, and subsequently have

difficulty advancing their sleep schedules. Exposure to light may help delay, and sedative-hypnotic medicines may help advance, sleep onset. Shift work disorders are born of changes from first or second to third shift schedules. Delayed sleep phase disorders result when the onset of sleep is intentionally delayed because of lifestyle concerns and the ensuing normal sleep duration causes social or occupational dysfunction the following day.

Treatment strategies are diverse, as one can see from the multiple causes of sleep impairment found in clinical practice. Optimizing and accentuating the importance of sleep hygiene is vitally important. Other psychiatric and medical conditions should be treated, and offending medications or drugs discontinued. Sedative medications should only be used whenever absolutely necessary and for the shortest possible duration. Benzodiazepine sedative-hypnotics such as lorazepam, diazepam, and alprazolam carry with them a very real risk of acute adverse effects such as slowed respiration, confusion, unsteady gait and falls, and the risk of dependence with chronic use.

SEE ALSO: Alcohol use, Anxiety disorders, Bipolar disorder, Insomnia, Posttraumatic stress disorder, Sleep hygiene, Substance use

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have been addressed from neurological, psychiatric, and medical causes, and acute stressors are not immediate by apparent. Sleep hygiene refers to patterns of behavior and attitudes about sleep for a given person. Probably one of the most significant factors is the misunderstanding that surrounds sleep. There are often significant maladaptive behaviors that can arise when a person develops sleep disturbances. This leads to a negative spiral that tends to exacerbate the symptoms of insomnia. It is imperative at the outset of addressing sleep issues to educate individuals about the natural process of sleep. When pathology has been ruled out, then individuals can be reassured that sleep will occur and this is important to provide relief to the suffering person. Insomnia may undermine an individual's own sleep. This occurs by factors that are under a given person's immediate control and issues which require adaptation to external factors or modification of those factors.

Factors under a person's direct control involve making a choice about what times a person chooses to sleep. It is advisable under most circumstances not to take naps greater than one half hour during the day if one expects to sleep at traditional times at night. Vigorous activities or eating substantially should be avoided close to anticipated times of sleep to alleviate insomnia. Avoidance of stimulants such as caffeine is also important. Forcing yourself to sleep is a common misconception. Going to bed when sleepy and not at arbitrary times needs to be appreciated. The tendency to overcontrol sleep instead of learning to work with an individual's sleep patterns needs flexibility to avoid anxiety or self-induced stress regarding sleep habits. Treatment needs to be directed toward the development of behaviors and adaptations to sleep patterns that are flexible.

It is important that the effect of external factors on sleep needs to be appreciated and again assist individuals in their ability to negotiate these issues. More challenging issues may indicate a need for psychotherapy. Anticipation of a job or endeavor the next day can contribute to anxiety and may compromise sleep. Recognition of the influence of thoughts on sleep patterns may be enough of an influence to change cognitive behaviors, yet, at other times, psychotherapy may be necessary to be able to adapt to changes required.

Chronic sedative use in the absence of applications of these principles is not only not helpful but is in fact counter productive. In fact, chronic sedative use is usually a sign of underlying issues, as previously mentioned, that have not been addressed.

Sleep Hygiene Sleep hygiene is an important consideration after underlying causes of sleep disturbance